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[54] AGRICULTURAL DISC MOUNTING SYSTEM AND METHOD

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[58] **Field of Search** 172/572, 708,
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643; 267/158, 164, 47

[56] References Cited

U.S. PATENT DOCUMENTS

- | | | | |
|-----------|---------|------------------------|-----------|
| 889,486 | 6/1908 | Ross . | |
| 928,029 | 7/1909 | Craig | 172/572 |
| 1,529,042 | 3/1925 | Teasley et al. | 172/599 |
| 2,211,675 | 8/1940 | Rushbrook | 172/572 |
| 2,750,861 | 6/1956 | Erwin . | |
| 3,058,531 | 10/1962 | Beaman et al. | 172/15 |
| 3,640,348 | 2/1972 | Womble | 172/573 |
| 3,967,685 | 7/1976 | Siekmeier . | |
| 4,066,132 | 1/1978 | Rehn | 172/572 |
| 4,333,535 | 6/1982 | Henrich, Sr. | 172/572 |
| 4,407,372 | 10/1983 | Rozeboom | 172/572 |
| 4,428,437 | 1/1984 | Steinberg | 172/572 X |
| 4,520,875 | 6/1985 | Deckler | 172/572 X |
| 4,683,958 | 8/1987 | Malinowski et al. | 172/705 |
| 4,724,910 | 2/1988 | Wheeler | 172/464 |
| 4,759,411 | 7/1988 | Williamson | 172/572 |
| 5,042,590 | 8/1991 | Bierl et al. . | |
| 5,267,619 | 12/1993 | Eversole . | |
| 5,785,129 | 7/1998 | Keller et al | 172/572 X |

OTHER PUBLICATIONS

Sales Literature of Brillion Iron Works, Inc. of Brillion, Wisconsin for Soil Commander, exact publication date unknown, but at least one year prior to the filing of the present application

Sales Literature of DMI, Inc. of Goodfield, Illinois for conservation yield-till tools Model 530, exact publication date unknown, but at least one year prior to the filing of the present application.

Sales Literature of Krause Corporation of Hutchinson, Kansas for disc and deep till in one—pass, exact publication date unknown, but at least one year prior to the filing of the present application.

Sales Literature of Landoll Corporation of Marysville, Kansas for Weatherproofer II disc and deep-till, exact publication date unknown, but at least one year prior to the filing of the present application.

Sales Literature of Sunflower Manufacturing Co., Inc. of Beloit, Kansas for Series 4000 Deep Tillage, exact publication date unknown, but at least one year prior to the filing of the present application.

Sales Literature of Sunflower Manufacturing Co., Inc. of Beloit, Kansas for Series 4311 Disc-Ripper, exact publication date unknown, but at least one year prior to the filing of the present application.

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ABSTRACT

A disc mounting system includes the attachment of each disc to a disc gang bar via a dedicated leaf spring. Each of the leaf springs, which can be generally U shaped, are attached at a top end to the gang bar and at a lower leg to a disc spindle such that the disc is positioned at least partially alongside the spring lower leg. The mounting system allows the disc to deflect vertically, laterally or torsionally when the disc encounters an obstacle. An optional shield can be attached to the leaf spring to prevent soil and debris thrown out by adjacent discs from entering the spring. A disc scraper blade can also be attached to the shield.

37 Claims, 4 Drawing Sheets

